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Draft Massachusetts Volkswagen Settlement Beneficiary Mitigation Plan

July 19, 2018

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I. INTRODUCTION

The Massachusetts Department of Environmental Protection (MassDEP) is issuing this Draft Massachusetts Beneficiary Mitigation Plan (BMP) for public comment. The BMP is the Commonwealth's plan for using its funding allocation from the environmental mitigation trust created by a federal settlement¹ resolving certain of the United States' environmental claims against Volkswagen and its affiliates (collectively Volkswagen or VW) for VW's violations of the federal Clean Air Act (VW Settlement).² Instructions for how to submit comments on the draft BMP can be found in Section VI.

The United States and other governments initiated investigations and enforcement actions against VW after it came to light that VW illegally installed so-called defeat devices in millions of diesel vehicles, including more than a half-million vehicles sold in the United States, causing the vehicles to emit higher-than-allowed amounts of nitrogen oxides (NO_x). The resulting settlement of certain of those enforcement actions led to the creation of the *Volkswagen Diesel Emissions Environmental Mitigation Trust for State Beneficiaries, Puerto Rico and the District of Columbia* to mitigate excess emissions, from which the Commonwealth has been allocated approximately \$75 million. This draft BMP discusses the health and environmental impacts of the pollutants emitted from the vehicles, the State's air emissions inventories, the inventory of diesel vehicles and equipment, and the Eligible Mitigation Actions (EMAs) under the VW Settlement that Massachusetts can implement to mitigate the excess emissions. Lastly, this Draft BMP outlines the plan to spend a portion of the allocation in Year One of the 15-year allowable VW expenditure timeline.

MassDEP has considered all EMAs allowed under the VW Settlement, giving particular attention to projects that promote electrification of the State's transportation network, focus on areas serving environmental justice populations, and provide equitable geographic distribution.

As Section V. discusses in more detail, MassDEP is proposing a Beneficiary Mitigation Plan that will support the following goals:

- Help the Commonwealth in achieving GHG emission reduction targets and reduce air pollution in the transportation network;
- Promote electrification of the State's transportation network;

¹ The settlement is documented in partial Consent Decrees entered by a California federal court on October 25, 2016, and May 17, 2017, In RE: Volkswagen "Clean Diesel," Marketing, Sales Practices, and Products Liability Litigation (United States v. Volkswagen AG, et al., No. 16 – cv – 295 (N.D. Cal.)). The Attorney General separately resolved the Commonwealth's related claims against VW in state court settlements filed in August 2016 and June 2017.

² Volkswagen AG, Audi AG, Porsche Cars of North America, Inc., Volkswagen Group of America, Inc., Volkswagen Group of America Chattanooga Operations, LLC Dr. Ing. h.c. F. Porsche AG, and Porsche Cars North America, Inc.

- Drive technological and policy progress in air pollution mitigation and GHG emissions reduction in the transportation network;
- Serve environmental justice populations; and
- Promote equitable geographic distribution across the state.

These goals will guide the planning, solicitation, and project selection processes. While all proposed projects allowed by the VW settlement will be considered, particular attention will be given to those that would best achieve the plan's goals.

Massachusetts plans to spend up to \$23.5 million in Year One on the following projects:

- \$11 million to support the purchase of electric transit buses by the Pioneer Valley and Martha's Vineyard Transit Authority;
- \$5 million on the installation of electric vehicle supply equipment (EVSE) to supplement the network of existing EVSE; and
- \$7.5 million made available through an open solicitation for proposals to implement projects eligible under any of the EMAs (except the EVSE EMA) allowed under the VW Settlement.

The Commonwealth may also use some or all of the 15% allowed for Administrative costs, when paired with an EMA. See Appendix A for details on allowable Administrative costs.

Commenters should also be aware that the Commonwealth, as allowed by the Settlement, may adjust its objectives and spending plan when necessary to achieve the BMP's goals. To reflect such changes, MassDEP will update the BMP and publish an amended BMP on MassDEP's public webpage at <https://www.mass.gov/guides/volkswagen-diesel-settlements-environmental-mitigation>.

This Draft BMP is not a solicitation for projects. MassDEP intends to solicit applications for projects in the future after the Draft BMP has been finalized and approved by the court appointed trustee.

This Draft BMP has been sent MassDEP's VW mailing list, and has been posted on the MassDEP website at <https://www.mass.gov/guides/volkswagen-diesel-settlements-environmental-mitigation>. The final BMP will be posted after review of public comments received.

II. BACKGROUND

A. The Volkswagen Settlement

In 2014, an investigation by the California Air Resources Board (CARB) and the U.S. Environmental Protection Agency (EPA) revealed that Volkswagen had manufactured light-duty passenger diesel vehicles for sale in the United States with computer software programmed to defeat vehicle emission tests. Using a special algorithm, VW calibrated the vehicles' emission control equipment to operate only during required emissions tests and to shut down at other times of regular operating use. The use of this "defeat device" software on approximately 590,000 2009 to 2016 model year VW vehicles, including approximately 14,000 vehicles in Massachusetts, resulted in tailpipe emissions of nitrogen oxides (NO_x) that were as much as 40 times greater than the NO_x emission standards established by CARB and EPA.

As a result of the probe and subsequent legal action, the U.S. Department of Justice reached settlements with VW in 2016 and 2017 to address the affected vehicles and the excess NO_x emissions. Among other measures, the VW Settlement required the creation of a \$2.925 billion Environmental Mitigation Trust (Trust) funded by VW to reduce the air quality impacts of the excess NO_x emissions. Each state and other U.S. entities³ ("Beneficiaries") receive an allocation of the total Trust amount based on the number of registered VW vehicles in the state that were equipped with defeat devices. Following the finalization of the agreement establishing the Trust for State Beneficiaries, which became effective on October 2, 2017, Massachusetts filed the required designation form to become a Beneficiary of the Trust on November 21, 2017.

Under the Trust agreement, each Beneficiary must develop a Beneficiary Mitigation Plan (BMP) to describe how it will spend its Trust allocation. The BMP must discuss how the state will implement the ten EMAs listed in the VW Settlement's Appendix D-2. Eight of these EMAs pertain to certain diesel engine groups such as heavy-duty freight trucks, locomotive switchers, and port cargo handling equipment (CHE), and offer specific strategies for reducing their NO_x emissions, such as replacing a diesel engine with an all-electric engine. The other two EMAs are the purchase and installation of electric vehicle supply equipment (EVSE) for light-duty zero emission vehicles (ZEVs), and projects available for funding under the federal Diesel Emissions Reduction Act (DERA). All ten EMA categories are described in more detail in Section IV.C.

B. Massachusetts's VW Funding Allocation

Based on the estimated 14,000 vehicles equipped with defeat devices in Massachusetts, the Commonwealth has been allocated \$75,064,424.40 in funding from the VW Settlement. Massachusetts has up to 10 years to spend 80% of its allocation and an additional five years to spend the remaining 20%. The VW Settlement also allows each state to expend up to one-third of its funding in the first year, or up to two-thirds in the first two years.

³ The District of Columbia, Puerto Rico and federally recognized Indian tribes.

MassDEP is the designated Lead Agency for Massachusetts under the VW Settlement and is responsible for developing the BMP for Massachusetts.

C. Health and Environmental Effects of NO_x

The Trust funds represent an opportunity for Massachusetts to mitigate the potential health and environmental harm caused by the excess NO_x emitted from the illegal VW vehicles. NO_x contributes to the formation of ground-level ozone and fine particulate matter, both of which are linked to short and long-term respiratory and cardiovascular health effects. One of the primary components of NO_x—nitrogen dioxide (NO₂)—also aggravates respiratory diseases, particularly asthma, and may contribute to childhood asthma development. Environmentally, NO_x emissions contribute to global warming, acid rain formation, and detrimental nutrient overloading in waterways.

D. Massachusetts Emissions Inventories

MassDEP produces a variety of inventories that estimate the relative contribution of emissions by sector in Massachusetts. MassDEP's NO_x, fine diesel particulate matter that is 2.5 microns or less in diameter (PM_{2.5}), and greenhouse gas (GHG) emissions inventories all show that mobile sources are the largest sector contributing to total Massachusetts emissions.

Massachusetts' most recent NO_x emissions data, for calendar year 2014, can be obtained from EPA's National Emission Inventories website at <https://www.epa.gov/air-emissions-inventories/2014-national-emissions-inventory-nei-data>, and is shown in Figures 1 and 2 below. Note that the category "Other" in Figure 1 accounts for the small amounts of emissions from Petroleum & Related Industries, Solvent Utilization, Metals Processing, Chemical & Allied, Product Manufacturing and Storage & Transport.

Figure 1. Massachusetts 2014 NOx emissions by sector (short tons and % of total)

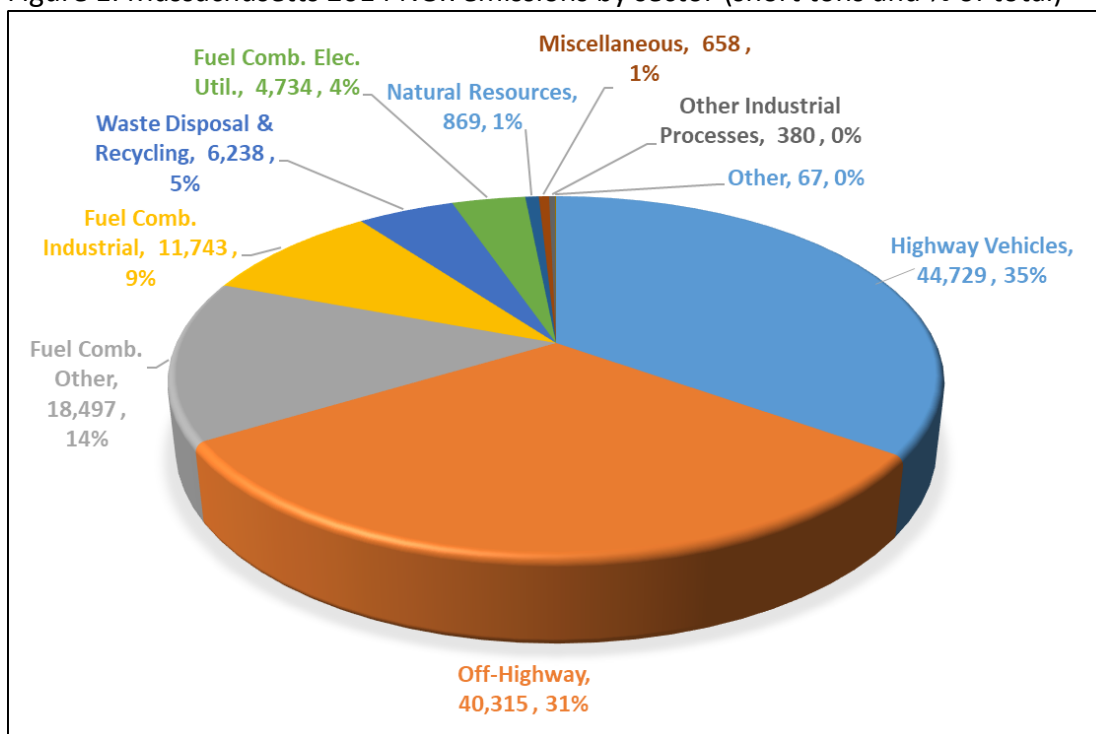
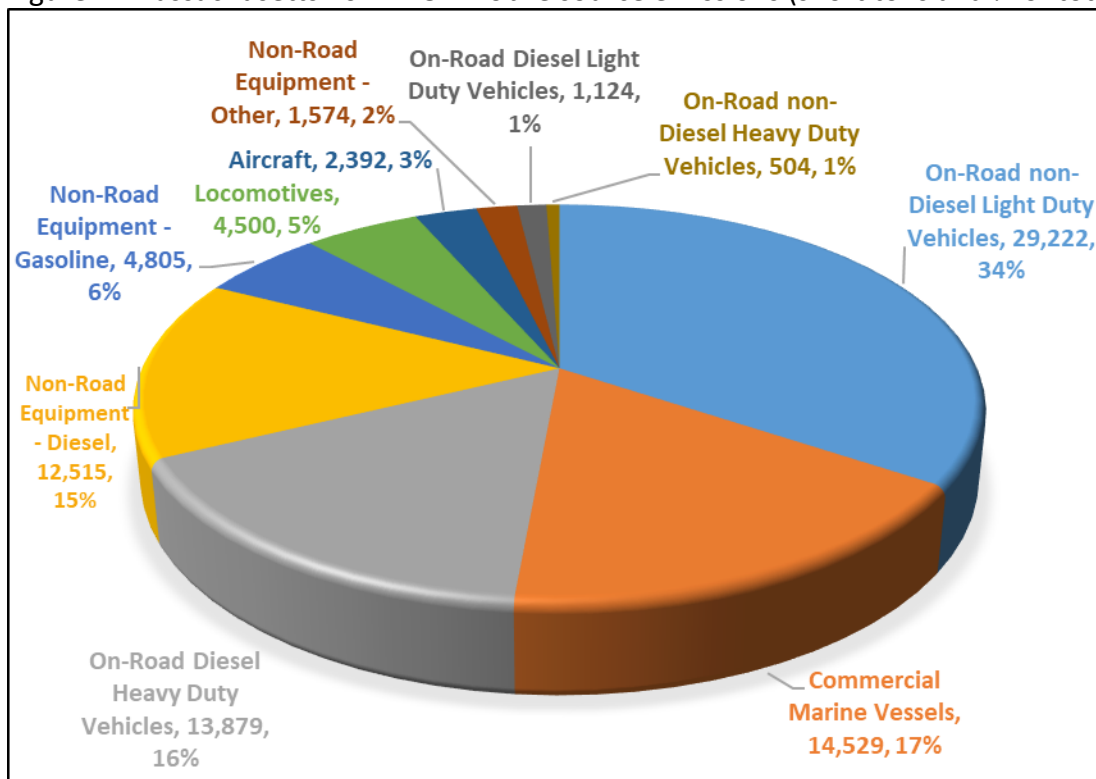


Figure 2. Massachusetts 2014 NOx mobile source emissions (short tons and % of total)



Massachusetts has recently updated its inventory of the diesel vehicles and engines in the state and the estimated fine particulate matter (PM_{2.5}) emissions due to the combustion of

diesel fuel. The following Figures 1-1 and 2-4 and Tables 1-1 and 3-2 are excerpted from the *Massachusetts 2016 Diesel Particulate Matter Inventory* (available at <https://www.mass.gov/lists/massdep-emissions-inventories#diesel-particulate-matter-inventories>).

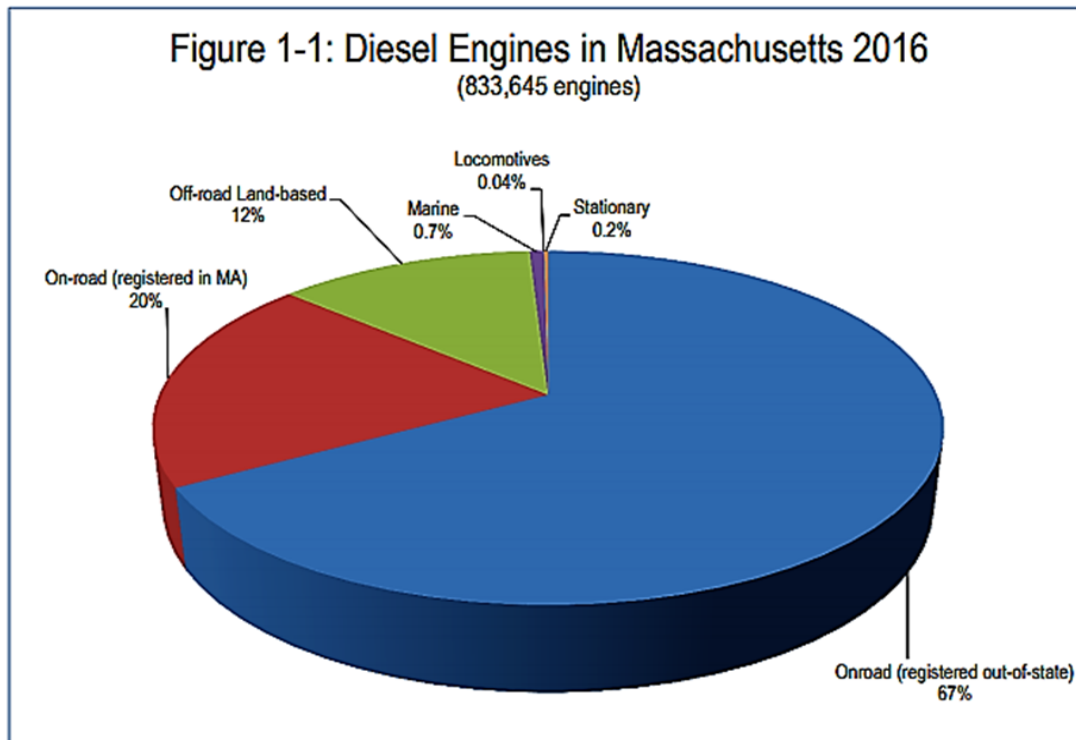


Figure 1-1 Diesel Engine Population by Sector in Massachusetts in 2016

Table 1-1 Diesel Engines and PM_{2.5} Emissions in Massachusetts 2002 and 2016

	Engines			PM _{2.5} Emissions (tons)*			PM _{2.5} Emissions Per Engine (tons)*		
	2002	2016	% Change	2002	2016	% Change	2002	2016	% Change
On-Road (registered out-of-state)	481,000	556,639	16%						
On-Road (registered in MA)	121,476	164,640	36%						
On-Road ALL	602,476	721,279	20%	1860	497	-73%	0.015	0.003	-80%
Off-Road Land-based	71,964	104,855	46%	1726	718	-58%	0.024	0.007	-71%
Marine	6,787	5,797	-15%	187	75	-60%	0.028	0.013	-53%
Locomotives	259	299	15%	142	66	-54%	0.548	0.221	-60%
Stationary	1,081	1,415	31%	32	19	-41%	0.030	0.013	-55%
Total	682,567	833,645	22%	3947	1375	-65%	0.020	0.005	-75%
Total (excluding registered out-of-state)	201,567	277,006	37%						

* In this inventory, a "ton" is a short ton (i.e., 2,000 pounds).

Table 3-2 On-Road Diesel Vehicles Registered in Massachusetts in 2016

MOVES Source Use Types	Examples of Vehicles in Class	Population
Passenger Car	Cars and smaller SUVs	14,981
Passenger and Light Commercial Trucks	Pickups with GVWR* \leq 10,000 lbs.	4,206
Buses	Intercity travel, transit, and school buses	11,413
Single Unit Trucks	Refuse trucks, local delivery trucks, motorhomes	93,490
Combination Unit Trucks	Tractor-trailer trucks often used for interstate travel	40,550
Total		164,640

* GVWR is gross vehicle weight rating and means the value specified by the manufacturer as the loaded weight of a single vehicle. (49 CFR 579.3).

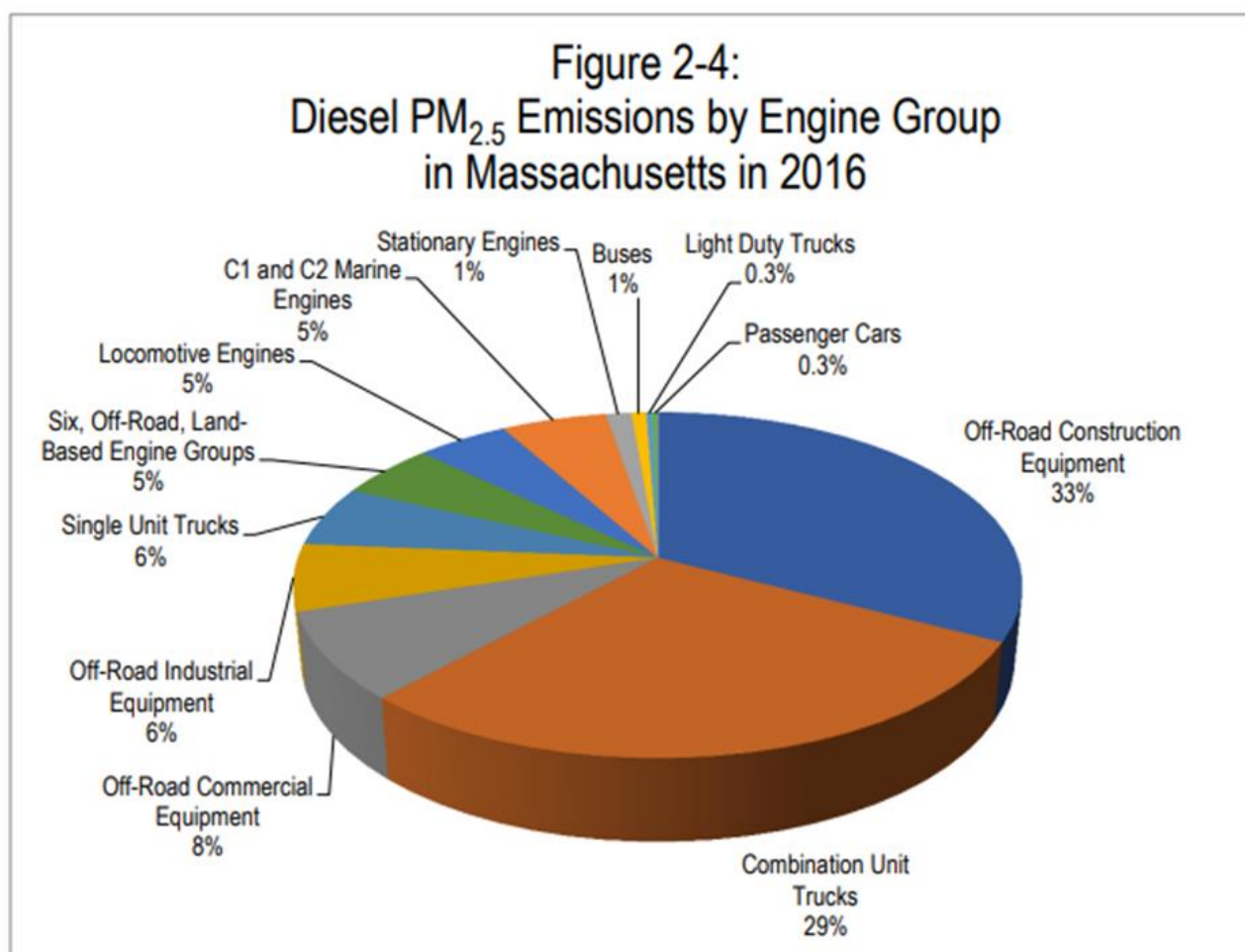


Figure 2-4 Diesel PM_{2.5} Emissions by Engine Group in Massachusetts in 2016

Massachusetts' most recent GHG inventory is for 2014 (available at <https://www.mass.gov/lists/massdep-emissions-inventories#greenhouse-gas-baseline-inventory-projection>), and indicates (as shown in Figures 3 and 4 below) that the mobile sector is the largest contributor to GHG emissions, the same as with the NO_x and diesel PM_{2.5} inventories.

Figure 3. Massachusetts 2014 Fuel Combustion GHG emissions (million metric tons of carbon dioxide equivalent)

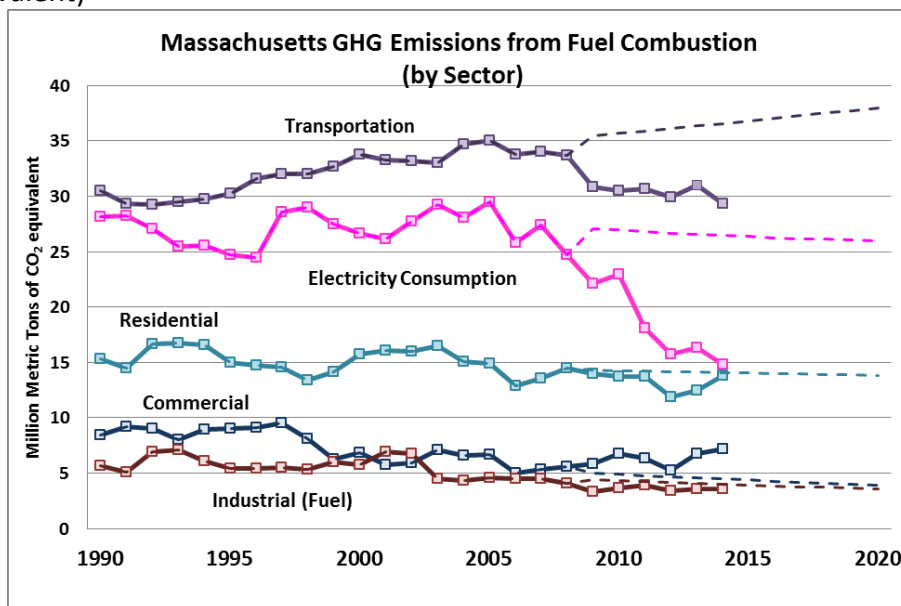
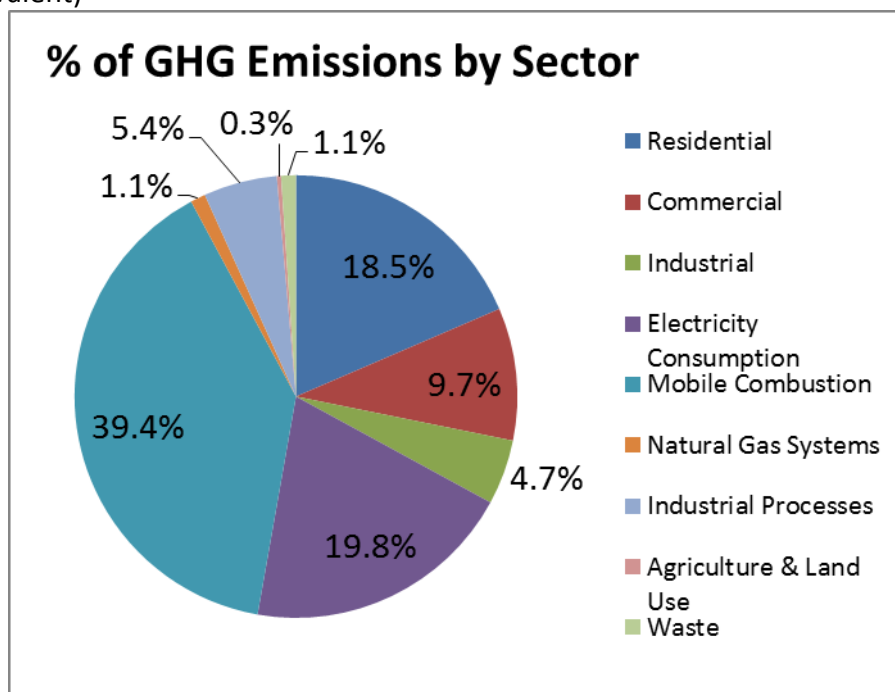


Figure 4. Massachusetts 2014 GHG emissions by sector (% of 74.6 million metric tons of carbon dioxide equivalent)



For further emissions inventory information, see MassDEP's website:
<https://www.mass.gov/lists/massdep-emissions-inventories>.

III. REQUIREMENTS FOR THE BENEFICIARY MITIGATION PLAN (BMP)

After public comment, the Massachusetts BMP will be submitted in accordance with paragraph 4.1 *Beneficiary Mitigation Plan* in the Trust agreement for state Beneficiaries. Paragraph 4.1 states that Massachusetts must:

submit and make publicly available a "Beneficiary Mitigation Plan" that summarizes how the Beneficiary plans to use the mitigation funds allocated to it under this Trust, addressing:

(i) the Beneficiary's overall goal for the use of the funds;

(ii) the categories of Eligible Mitigation Actions the Beneficiary anticipates will be appropriate to achieve the stated goals and the preliminary assessment of the percentages of funds anticipated to be used for each type of Eligible Mitigation Action;

(iii) a description of how the Beneficiary will consider the potential beneficial impact of the selected Eligible Mitigation Actions on air quality in areas that bear a disproportionate share of the air pollution burden within its jurisdiction; and

(iv) a general description of the expected ranges of emission benefits the Beneficiary estimates would be realized by implementation of the Eligible Mitigation Actions identified in the Beneficiary Mitigation Plan.

The Trust agreement requires a Beneficiary to submit and make publicly available its BMP not later than 30 days before submitting its first funding request. Beneficiaries may adjust their goals and specific spending plans at their discretion and, if they do so, they are to provide the Trustee with updates to their BMP.⁴ Also under paragraph 4.1 of the Trust Agreement, the BMP must explain the process by which MassDEP shall seek and consider public input on its BMP.

IV. CATEGORIES OF ELIGIBLE MITIGATION ACTIONS (EMAs)

A. Overview

The primary emission reduction strategies for the engine group-based EMAs include:

- Repowering a diesel engine with a new diesel, alternate fuel (AF), or all-electric engine; and/or
- Replacing an entire vehicle or piece of diesel equipment with a new diesel, AF, or all-electric vehicle or piece of equipment.

⁴ MassDEP will make any changes so submitted available on its VW website:
<https://www.mass.gov/guides/volkswagen-diesel-settlements-environmental-mitigation>.

AF options include compressed natural gas, propane, and other fuels used alone or in addition to gasoline or diesel fuel such as a diesel electric hybrid. All electric engines include electric engines and hydrogen fuel cells. The technologies, fuels, and electric options are further detailed in Section IV.C. of this BMP. Appendix D-2 of the applicable VW Settlement consent decree provides specific definitions of some of the terms used in the EMAs; these definitions are included in the attached Appendix B.

Some EMAs, such as #6: Class 4 through 7 Local Freight Trucks (Medium Trucks) and #2: Class 4 through 8 School Bus, Shuttle Bus, or Transit Bus (Eligible Buses), allow for both of the above technology approaches and a variety of fuel and non-fuel (i.e., all-electric engines and fuel cells) options. Others, such as airport ground-support equipment (GSE), restrict engine repowers and vehicle and equipment replacement to all-electric engines and electric vehicles and equipment, respectively. Freight switchers have an additional option in which the locomotive engine may be repowered or the switcher replaced with one or more diesel, AF or electric generator sets. The tug and ferry group allows for the additional option of an engine upgrade with a Certified Remanufacture System or a Verified Engine Upgrade.

B. EMA Funding and Cost-Share Requirements

The VW Settlement specifies the maximum allowable percentage funding of an EMA's total cost. The percentage is dependent on the EMA category and whether the recipient is a governmental or non-governmental entity. The Commonwealth may choose to fund less than the maximum allowable percentage. According to Appendix D-2, Massachusetts may fund up to 100% of any technology implemented on a government-owned (GOV) vehicle, vessel or equipment. For technologies on a vehicle, vessel, or equipment owned by a non-governmental (NON-GOV) entity, Massachusetts may, depending on whether the EMA allows for the technology, fund:

- Up to 40% of the cost to repower a diesel engine with a new diesel or AF engine;
- Up to 25% of the cost to purchase a new diesel or AF vehicle (except in the case of port drayage trucks, which is up to 50%);
- Up to 75% of the cost to repower a diesel engine with an all-electric engine; or
- Up to 75% of the cost to purchase a new all electric vehicle.

A government entity, according to Appendix D-2, includes a state or local government agency (including a school district, municipality, city, county, special district, transit district, joint powers authority, or port authority, owning fleets purchased with government funds) and a tribal government or native village.

C. Appendix D-2 EMAs

The ten EMAs in Appendix D-2 are listed below. The table following each EMA description shows the group's specific emission reduction technologies, the costs that could be covered, and the maximum percentage amount Massachusetts could fund for a technology, depending upon whether the applicant is a governmental or non-governmental entity.

1. Class 8 Local Freight Trucks and Port Drayage Trucks (Large Trucks)

Eligible trucks must have 1992-2009 model year engines and a Gross Vehicle Weight Rating (GVWR)⁵ of 33,001 pounds (lbs.) or more; are used for port drayage, freight, and/or cargo delivery; and operate within Massachusetts. As defined by Appendix D-2, drayage trucks are trucks that haul cargo to and from ports and intermodal rail yards.

EMAs for Class 8 Local Freight Trucks	Costs Covered	Maximum Allowable Funding %	
		GOV	NON-GOV
Repower w/new diesel or AF engine	Engine purchase & installation	100%	40%
Replace w/new diesel or AF vehicle	Vehicle purchase	100%	25% (50% for port drayage)
Repower w/new all-electric engine	Engine purchase & installation & purchase & installation of electric charging & fuel cell infrastructure	100%	75%
Replace w/new all-electric vehicle	Vehicle purchase & purchase & installation of electric charging & fuel cell infrastructure	100%	75%

2. Class 4 through 8 School, Shuttle, or Transit Buses

Eligible buses must have model year 2009 or older engines and a GVWR of 14,001 lbs. or more and be used for transporting people. Appendix D-2 defines school buses as Class 4-8 buses sold or introduced into interstate commerce for purposes that include carrying students to and from school or related events, and that may be Type A through D buses. Note that for this EMA group, privately-owned buses under contract with a public school district are eligible for funding up to 100%.

EMAs for Class 4-8 School, Shuttle or Transit Buses	Costs Covered	Maximum Allowable Funding %	
		GOV	NON-GOV
Repower w/new diesel or AF engine	Engine purchase & installation	100%	40%
Replace w/new diesel or AF vehicle	Vehicle purchase	100%	25%
Repower w/new all-electric engine	Engine purchase & installation & purchase & installation of electric charging & fuel cell infrastructure	100%	75%
Replace w/new all-electric vehicle	Vehicle purchase & purchase & installation of electric charging & fuel cell infrastructure	100%	75%

⁵ Appendix D-2 defines GVWR as the maximum weight of the vehicle, as specified by the manufacturer. It includes the total vehicle weight plus fluids, passengers and cargo. The total vehicle weight includes the engine, chassis, body, and fuel.

3. Freight Switchers

As defined by Appendix D-2, eligible freight switchers are locomotives that move rail cars around a rail yard (as compared to a line-haul engine that moves freight long-distances); have pre-Tier 4 engines; and operate 1,000 hours or more per year. Pre-Tier 4 switcher engines are model year 2014 and older models. Appendix D-2 defines a generator set (genset) as a switcher locomotive equipped with multiple engines that can turn off one or more engines to reduce emissions and save fuel depending on the load it is moving.

EMAs for Freight Switchers	Costs Covered	Maximum Allowable Funding %	
		GOV	NON-GOV
Repower w/new diesel or AF engine or genset	Engine purchase & installation	100%	40%
Replace w/new diesel or AF switcher and/or genset	Switcher purchase	100%	25%
Repower w/new all-electric engine or genset	Engine or genset purchase & installation & purchase & installation of electric charging & fuel cell infrastructure	100%	75%
Replace w/new all-electric switcher and/or genset	Switcher and/or genset purchase & purchase & installation of electric charging & fuel cell infrastructure	100%	75%

4. Ferries and Tugs

Eligible ferries and tugs have unregulated, Tier 1 or Tier 2 marine engines as classified by EPA. As defined by Appendix D-2, tugs are dedicated vessels that push or pull other vessels in ports, harbors and inland waterways (e.g., tugboats and towboats). As noted in the Appendix D-2 definition of a repower, repowers for ferries and tugs include diesel engine upgrades with an EPA or CARB Certified Remanufacture System and/or an EPA or CARB Verified Engine Upgrade.

EMAs for Ferries/Tugs	Costs Covered	Maximum Allowable Funding %	
		GOV	NON-GOV
Repower w/new Tier 3 or 4 diesel or AF engine	Engine purchase & installation	100%	40%
Diesel engine upgrade w/Certified Remanufacture System and/or Verified Engine Upgrade	Engine purchase & installation	100%	40%
Repower w/new all-electric engine	Engine purchase & installation & purchase & installation of electric charging & fuel cell infrastructure	100%	75%

5. Shore-power for Ocean-Going Vessels (OGV)

Eligible OGV shore-power are systems that enable a compatible vessel's main and auxiliary engines to remain off while the vessel is at berth. Components eligible for funding are listed in the table. Marine shore power systems must comply with international shore power design standards (ISO/IEC/IEEE 80005-1-2012 High Voltage Shore Connection Systems or IEC/PAS 80005-3:2014 Low Voltage Shore Connection Systems) and should be supplied with power sources from the local utility grid.

EMA for OGV Shore-power	Costs Covered	Maximum Allowable Funding %	
		GOV	NON-GOV
Shore-side system	Cables, cable management systems, shore power coupler systems, distribution control systems, and power distribution	100%	25%

6. Class 4 through 7 Local Freight Trucks (Medium Trucks)

Freight trucks in this category have 1992 through 2009 model year engines, a GVWR between 14,001 and 33,000 lbs., and operate within Massachusetts. As defined by Appendix D-2, local freight trucks are trucks, including commercial trucks, that are used to deliver cargo and freight (e.g., courier services, delivery trucks, box trucks moving freight, waste haulers, dump trucks, concrete mixers).

EMAs for Class 4-7 Local Freight Trucks	Costs Covered	Maximum Allowable Funding %	
		GOV	NON-GOV
Repower w/new diesel or AF engine	Engine purchase & installation	100%	40%
Replace w/new diesel or AF vehicle	Vehicle purchase	100%	25%
Repower w/new all-electric engine	Engine purchase & installation & purchase & installation of electric charging & fuel cell infrastructure	100%	75%
Replace w/new all-electric vehicle	Vehicle purchase & purchase & installation of electric charging & fuel cell infrastructure	100%	75%

7. Airport Ground Support Equipment (GSE)

Eligible airport GSE includes Tier 0, Tier 1, or Tier 2 diesel powered equipment; and uncertified, or certified to 3 grams per brake horsepower-hour or higher emissions, spark ignition-powered equipment. Appendix D-2 defines airport GSE as vehicles and equipment used at an airport to service aircraft between flights.

EMAs for Airport GSE	Costs Covered	Maximum Allowable Funding %	
		GOV	NON-GOV
Repower w/new all-electric engine	Engine purchase & installation & purchase & installation of electric charging & fuel cell infrastructure	100%	75%
Replace w/new all-electric equipment	Equipment purchase & purchase & installation of electric charging & fuel cell infrastructure	100%	75%

8. Forklifts and Port Cargo Handling Equipment (CHE)

As defined by Appendix D-2, eligible forklifts with over 8,000 lbs. lift capacity are nonroad equipment used to lift and move materials short distances and generally have tines to lift objects. Examples include reach stackers, side loaders and top loaders. Eligible port CHE are rubber-tired gantry cranes, straddle carriers, shuttle carriers, and terminal tractors, including yard hostlers and yard tractors that operate within ports. No model years or emission standard tiers are specified in this group's eligibility requirements.

EMAs for Forklifts and Port CHE	Costs Covered	Maximum Allowable Funding %	
		GOV	NON-GOV
Repower w/new all-electric engine	Engine purchase & installation & purchase & installation of electric charging & fuel cell infrastructure	100%	75%
Replace w/new all-electric equipment	Equipment purchase & purchase & installation of electric charging & fuel cell infrastructure	100%	75%

9. Light Duty Zero Emission Vehicle Supply Equipment (EVSE)

15% of the Trust funding can be used to support the acquisition, installation and maintenance of equipment for both the electric and hydrogen fuel cell options, including:

- Level 1, Level 2, or fast charging equipment (or analogous successor technologies) that is located in a public place, workplace, or multi-unit dwelling and not at a private residential dwelling that is not a multi-unit dwelling; and

- Light duty hydrogen fuel cell equipment capable of dispensing hydrogen at a pressure of 70 megapascals (MPa) (or analogous successor technologies) that is located in a public place.

Funding cannot be used to purchase or rent real estate, other capital costs (e.g., construction of buildings, parking facilities, etc.) or general maintenance (i.e., maintenance other than of the supply equipment).

EMAs for Light Duty Zero Emission VSE	Maximum Allowable Funding %
Open to public at government-owned property	100%
Open to public at non-government owned property	80%
At workplace not open to general public	60%
At multi-unit dwelling not open to general public	60%

EMAs for Light Duty Hydrogen Fuel Cell VSE	Maximum Allowable Funding %
Open to public and able to dispense at least 250 kg/day	33%
Open to public and able to dispense at least 100 kg/day	25%

10. Diesel Emissions Reduction Act (DERA) Option

Massachusetts may use Trust funds to match funding under its allocation under the federal DERA Clean Diesel State Grant, which EPA distributes to states for diesel emission reduction projects. This option would allow MassDEP to use the funds for emission reduction projects not specified in EMAs one through nine but that are otherwise eligible under DERA. Actions available under DERA that are not eligible under the nine EMAs include retrofits, idle reduction technology, electrification of parking spaces at truck stops and engine remanufacture for several engine groups. DERA also allows states to fund projects on engines manufactured in earlier model years than those specified for the EMAs.

Massachusetts does not plan to use Trust funds to match the federal DERA State Clean Diesel Grant in year one of its Trust expenditures, but will consider the DERA option for future years.

The eligibility of the engine groups in EMAs 1-9 and the DERA Option overlap. For example, EMAs #1 and #6 regarding Class 8 Freight Trucks weighing 33,001 lbs. or more and Class 4 through 7 Freight Trucks weighing between 14,001 lbs. and 33,000 lbs., respectively, are similar to DERA's category of Class 5 through 8 Medium and Heavy

Duty Highway Vehicles. In this DERA category, the vehicle weight eligibility is 16,001 lbs. and over.

The maximum funding levels for DERA projects also differ from those established for the other EMAs (DERA is most often lower, but sometimes higher). Therefore, the maximum funding level available for a particular project would differ depending on whether it is funded through the DERA EMA vs. another EMA. Information on the DERA Option, including a comparison of the EMAs and the DERA Option eligible actions can be found at <https://www.epa.gov/cleandiesel/vw-settlement-dera-option-supporting-documents>.

V. MASSACHUSETTS'S PRIORITIES AND YEAR ONE SPENDING PLAN

A. Massachusetts BMP Goals

To solicit input on ways to utilize the funding from the VW settlement, MassDEP held a series of regional stakeholder meetings from January-March, 2018. In addition, MassDEP issued a Request for Information (RFI) to obtain data and feedback on how the state should expend those funds, encouraging people who are knowledgeable about vehicles and engines powered by diesel, alternate fuels, and electricity (including fuel cells), as well as about emissions reductions to respond. The agency also encouraged submissions from public and private entities that may be interested in applying for funding to respond and provide data on their fleets.

Based on the data gathered by MassDEP, including extensive public input, MassDEP is proposing a Beneficiary Mitigation Plan that will support the following goals:

- Help the Commonwealth in achieving GHG emission reduction targets and reduce air pollution in the transportation network;
- Promote electrification of the State's transportation network;
- Drive technological and policy progress in air pollution mitigation and GHG emission reduction in the transportation network;
- Serve environmental justice populations; and
- Promote equitable geographic distribution across the state.

These goals will guide the planning, solicitation, and project selection processes. While all proposed projects allowed by the VW settlement will be considered, particular attention will be given to those that would best achieve the plan's goals. Please note that these are goals, not eligibility criteria.

B. Consideration of Air Pollution Burden

As noted in the introduction and identified in Section V.A. as one of the three main goals of this BMP, Massachusetts will pay particular attention to EMAs proposed in environmental justice areas that will serve environmental justice populations in the Commonwealth. Projects that provide environmental benefits and reduce environmental burdens in these areas support this BMP goal.

Executive Order 552 encourages “sustained and continued efforts now and in the future to ensure that environmental justice remains a priority for the Executive branch.” It requires agencies to continue working to implement the Commonwealth’s Environmental Justice Policy to consider environmental justice in the development of state programs, including those implementing grants of financial resources or economic assistance. The Commonwealth’s Executive Office of Energy and Environmental Affairs (EOEEA) updated its Environmental Justice Policy in 2017 reiterating the purpose of ensuring that environmental justice is an integral consideration in implementing all EOEEA programs, including grants of financial resources, and implementation and enforcement of laws.

C. Emission Reductions

The repower, replacement, or retrofit of eligible vehicles and equipment provides a wide range of emission benefits based on many variables, including the type of vehicle or engine replaced, the initial age of the engine, the engine’s duty cycle and power rating and how much the vehicle or engine operates. Based on current EPA exhaust emission standards for NO_x:

- Electric engines/equipment that repower or replace eligible engines/equipment, such as the \$11 million for the purchase of electric transit buses, will reduce 100% of tailpipe emissions,
- EVSE installations, such as the \$5 million for the installation of electric vehicle supply equipment, will facilitate and promote the adoption of electric vehicles that have significantly less (in the case of plug-in hybrids) or no tail pipe emissions, compared to internal combustion engines (ICE),
- Heavy duty highway vehicles may provide up to 96% reduction in NO_x emissions per vehicle, based on replacing a model year 1992 engine with a model year 2007 engine,
- Non-road equipment replacements, depending on the type of equipment and engine power rating, may provide between 20% and 95% reduction in NO_x emissions for each engine,
- Locomotives may provide up to 89% NO_x reduction per engine, based on replacing the oldest (Tier 0) engine with the newest (Tier 4) engine,
- Replacement or repower of a ferry or tug engine may provide up to 80% NO_x reduction for each vessel, and
- Shore-power projects may reduce all NO_x exhaust emissions from many ocean-going vessels.

These anticipated ranges of emission benefits will be used to inform the Plan’s funding priorities, categories of eligible mitigation projects, and funding allocation considerations for each category of eligible mitigation projects. It is important to note that the range of emission benefits mentioned above are for individual engines and actual NO_x emissions reductions will vary based on the type of projects proposed received for funding consideration, and the eligible mitigation projects ultimately funded.

D. Year One EMA Categories and Percentages

Year One funding is projected at \$23.5 million (31.3% of \$75.0644244 million), within the maximum \$25.021 million (one third of \$75.0644244 million) allowed in year one funding. The Year One project categories and estimated funding amounts that MassDEP anticipates will be appropriate to achieve the BMP's goals are:

- \$11 million (14.7% of \$75,064,424.40 million) for the purchase of electric transit buses and ancillary electric amenities for the transit buses for two Regional Transit Authorities (RTAs) under EMA #2. Buses will be purchased for the Pioneer Valley Transit Authority (PVTa) and the Martha's Vineyard Transit Authority (MVTa). Both of RTAs have already added electric transit buses to their fleets and the VW Settlement funds will support eight additional electric buses for the PVTa and five additional buses for the MVTa. These two RTAs were selected for Year One funding based on their ability to procure buses in state fiscal year 2019.
- \$5 million (6.7% of \$75,064,424.40 million) for the installation of electric vehicle supply equipment (EVSE) under EMA #9; and,
- \$7.5 million (10.0% of \$75,064,424.40 million) for projects proposed through an open solicitation to implement any of the EMAs (except the EVSE EMA #9) allowed under the VW Settlement.

MassDEP received significant comment and support from stakeholders on the importance of funding electric transit buses serving EJ neighborhoods and communities and the need to reduce vehicle pollution in these areas. Based on input from MassDOT, two RTAs (PVTa and MVTa) would be able to purchase buses in fiscal year 2019 and are proposed for \$11 million in Year One funding. Both of these RTAs operate in EJ communities.

The \$5 million in funding for EVSE will support and focus on three areas including workplace charging, charging at multi-unit dwellings, and Level 2 public charging. MassDEP will solicit projects through an open enrollment process and select EVSE projects for funding based on established criteria such as location (in EJ areas and geographic distribution), size of employer, and ability to quickly deploy charging stations. MassDEP anticipates beginning this solicitation in Fall, 2018.

The \$7.5 million for all EMAs with the exception of EMA #9 will be awarded through a project solicitation and competitive grant process with an application deadline. MassDEP anticipates that it will receive grant applications that exceed the amount of funding available; therefore, criteria will be established for scoring and selecting projects. Such criteria may include but not be limited to: the level of emissions reductions anticipated; the level to which or whether the project promotes electrification of the transportation system; the level to which the project drives technological and policy progress in air pollution mitigation and GHG emissions reduction in the transportation network; project location (in EJ areas and geographic distribution) and; the amount of project funding match by the project proponent. MassDEP anticipates beginning this solicitation in Fall, 2018.

E. Public Input Process

MassDEP held 10 stakeholder meetings across Massachusetts to solicit input on how VW Settlement funds should be spent. MassDEP then issued a Request for Information (RFI), which was open for 4 weeks, to seek input on how the Commonwealth might expend its \$75 million VW Settlement allocation. The RFI and associated Spreadsheet for Responding to the RFI were posted on MassDEP's website at <https://www.mass.gov/guides/volkswagen-diesel-settlements-environmental-mitigation#news-updates> and on COMMBUYS, the Commonwealth's procurement website, at <https://www.commbuys.com/bsi/external/bidDetail.sdo?docId=BD-18-1045-BAW00-BAW01-26266&external=true&parentUrl=bid>.

MassDEP also seeks public input on this Draft BMP, as further discussed in Section VI. below.

Also, MassDEP will maintain and make publically available all documentation submitted in the support of the funding request and all records supporting all expenditures of eligible mitigation project funds, and use its website to keep the public informed of funded projects.

VI. COMMENT SUBMISSION INSTRUCTIONS

A. Comment Submission Requirements

1. All comments on this Draft BMP are due by 5:00 p.m. (EDT) on August 20, 2018.
2. Electronic comments via e-mail are preferred, although hard copy comments will be accepted. The subject line of the e-mail containing the comments on this Draft BMP should state: "Comments on VW Draft BMP."
3. For electronic submissions, MassDEP requests that commenters compress (i.e., use a zip file) attachments with file sizes exceeding 10 MB to ensure message delivery. The comments should be in a format readable by Open Office: text or spreadsheet document or; Microsoft: Word or Excel.
4. Comments should be sent to the contact listed in Draft BMP Section VI.C.

B. Comment Format

Comments on this Draft BMP should include:

1. The name, address, phone number, website (if applicable), and brief description of the commenting individual/entity;
2. The name, title, phone number and email address of the entity's contact person; and,
3. The Commenter's name on every page.

C. MassDEP Contact Information

Please direct all comments to:

Susan Lyon
Massachusetts Department of Environmental Protection
1 Winter St., 6th Floor
Boston, MA 02108
vw.settlement@mass.gov

D. Advisories

1. Public Records/Ownership of Submitted Materials

All comments on this Draft BMP will be public record under the Commonwealth's Public Records Law, M.G.L. c. 66, §10, regardless of any confidentiality notices set forth on such responses. Any comments on this Draft BMP that are submitted to MassDEP become the property of MassDEP and will be maintained by and made accessible to outside parties at the discretion of MassDEP, in accordance with the public records law.

2. No Contract or Agreement for Services

This Draft BMP is provided for public comment in accordance with paragraph 4.1 of the VW Settlement and is intended to provide the public with insight into the Commonwealth of Massachusetts' high-level vision for use of the mitigation funds and information about the specific uses for which funding is expected to be requested. It is not a formal solicitation for products or services. Nothing in this document is intended to make the Draft BMP binding on MassDEP or the Commonwealth of Massachusetts, nor does it create any rights in any person to claim an entitlement of any kind. This Draft BMP is not a contract or a contract solicitation. Submission of a comment on this Draft BMP does not create any obligations, contractual or otherwise, on behalf of MassDEP. This Draft BMP does not in any way require MassDEP to issue or amend a solicitation or to include any of the Draft BMP provisions or comments in any existing or future solicitation. Submission of a comment on this Draft BMP does not create any type or level of agency or partnership or any employer/employee relationship between the submitting entity and MassDEP.

3. Review Rights

MassDEP reserves the right to have a review performed of any and all comments on this Draft BMP, including materials presented at any presentations. Said review may be conducted by, but is not limited to, officials of MassDEP or any Massachusetts state agency and any independent consultants retained by them.

4. Comments not Required to be Eligible to Receive Funds

Commenting on this Draft BMP is entirely voluntary and will in no way affect the Commonwealth's consideration of any proposal submitted in response to a solicitation that may be subsequently issued or amended.

E. Additional Information

MassDEP retains the right to request additional information or clarification from commenters. MassDEP may, at its sole discretion, elect to request formal presentations from certain vendors of the products or services detailed in their comment submissions.

APPENDIX A: ELIGIBLE MITIGATION ACTION ADMINISTRATIVE EXPENDITURES

Consistent with Appendix D-2 of the VW Settlement, the following details the types of administrative costs that can be funded in implementing the EMAs:

For any eligible mitigation project, Trust Funds can be used for the actual administrative expenditures associated with implementing such eligible mitigation project, but not to exceed 15% of the total cost of such eligible mitigation project. The 15% cap includes the aggregated amount of eligible administrative expenditures incurred by the Beneficiary and any third-party contractors. The Commonwealth will seek to maximize the use of settlement funding on activities that directly advance the goals of the settlement and this plan. These eligible administrative expenditures include the following:

1. Personnel including costs of employee salaries and wages, but not consultants.
2. Fringe Benefits including costs of employee fringe benefits such as health insurance, Federal Insurance Contributions Act, retirement, life insurance, and payroll taxes.
3. Travel including costs of mitigation project-related travel by program staff, not including consultant travel. Any use of funds to support travel must adhere to Commonwealth policies and procedures governing travel by state employees.
4. Supplies including tangible property purchased in support of the mitigation project that will be expensed on the "Statement of Activities", such as educational publications, office supplies, etc.
5. Contractual cost including all contracted services and goods except for those charged under other categories such as supplies, construction, etc. Contracts for evaluation and consulting services and contracts with sub-recipient organizations must be included.
6. Construction including costs associated with ordinary or normal rearrangement and alteration of facilities.
7. Other costs including insurance, professional services, occupancy and equipment leases, printing and publication, training, indirect costs, and accounting.

APPENDIX B: DEFINITIONS

Appendix D-2 of the VW Settlement provides specific definitions of some of the terms used in the EMAs:

- *Airport Ground Support Equipment* shall mean vehicles and equipment used at an airport to service aircraft between flights.
- *All-Electric* shall mean powered exclusively by electricity provided by a battery, fuel cell, or the grid.
- *Alternate Fueled* shall mean an engine, vehicle or piece of equipment that is powered by an engine, which uses a fuel different from or in addition to gasoline fuel or diesel fuel (e.g., (CNG, propane, diesel-electric hybrid).
- *Certified Remanufacture System or Verified Engine Upgrade* shall mean engine upgrades certified or verified by EPA or California Air Resources Board (CARB) to achieve a reduction in emissions.

- *Class 4-7 Local Freight Trucks (Medium Trucks)* shall mean trucks, including commercial trucks, used to deliver cargo and freight (e.g., courier services, delivery trucks, box trucks moving freight, waste haulers, dump trucks, concrete mixers) with a Gross Vehicle Weight Rating (GVWR) between 14,001 and 33,000 pounds (lbs).
- *Class 4-8 School Bus, Shuttle Bus, or Transit Bus (Buses)* shall mean vehicles with a GVWR greater than 14,001 lbs. used for transporting people. See definition of School Bus below.
- *Class 8 Local Freight and Port Drayage Trucks (Eligible Large Trucks)* shall mean trucks with a GVWR greater than 33,000 lbs. used for port drayage and/or freight/cargo delivery, (including waste haulers, dump trucks, concrete mixers).
- *CNG* shall mean Compressed Natural Gas.
- *Drayage Trucks* shall mean trucks hauling cargo to and from ports and intermodal rail yards.
- *Forklift* shall mean nonroad equipment used to lift and move materials short distances; and generally includes tines to lift objects. Eligible types of forklifts include reach stackers, side loaders, and top loaders.
- *Freight Switcher* shall mean a locomotive that moves rail cars around a rail yard as compared to a line-haul engine that move freight long distances.
- *Generator Set* shall mean a switcher locomotive equipped with multiple engines that can turn off one or more engines to reduce emissions and save fuel depending on the load it is moving.
- *Government* shall mean a State or local government agency (including a school district, municipality, city, county, special district, transit district, joint powers authority, or port authority, owning fleets purchased with government funds), and a tribal government or native village. The term *State* shall mean the Several States, the District of Columbia, and the Commonwealth of Puerto Rico.
- *Gross Vehicle Weight Rating (GVWR)* shall mean the maximum weight of the vehicle, as specified by the manufacturer. GVWR include the following total vehicle weight plus fluids, passengers, and cargo:
 - Class 1: < 6000 lb.
 - Class 2: 6001-10,000 lb.
 - Class 3: 10,001-14,000 lb.
 - Class 4: 14,001-16,000 lb.
 - Class 5: 16,001-19,500 lb.
 - Class 6: 19,501-26,000 lb.
 - Class 7: 26,001-33,000 lb.
 - Class 8: > 33,001 lb.
- *Hybrid* shall mean a vehicle that combines an internal combustion engine with a battery and electric motor.
- *Infrastructure* shall mean the equipment used to enable the use of electric powered vehicles (e.g., electric vehicle charging station).
- *Intermodal Rail Yard* shall mean a rail facility in which cargo is transferred from drayage truck to train or vice-versa.

- *Plug-in Hybrid Electric Vehicle (PHEV)* shall mean a vehicle that is similar to a hybrid but is equipped with a larger, more advanced battery that allows the vehicle to be plugged in and recharged in addition to refueling with gasoline. This larger battery allows the car to be driven on a combination of electric and gasoline fuels.
- *Port Cargo Handling Equipment* shall mean rubber-tired gantry cranes, straddle carriers, shuttle carriers, and terminal tractors, including yard hostlers and yard tractors that operate within ports.
- *Repower* shall mean to replace an existing engine with a newer, cleaner engine or power source that is certified by EPA and, if applicable, CARB, to meet a more stringent set of engine emission standards. Repower includes, but is not limited to, diesel engine replacement with an engine certified for use with diesel or a clean alternate fuel, diesel engine replacement with an electric power source (grid, battery), diesel engine replacement with a fuel cell, diesel engine replacement with an electric generator(s) (genset), diesel engine upgrades in Ferries/Tugs with an EPA Certified Remanufacture System, and/or diesel engine upgrades in Ferries/Tugs with an EPA Verified Engine Upgrade. All-Electric and fuel cell Repowers do not require EPA or CARB certification.
- *School Bus* shall mean a Class 4-8 bus sold or introduced into interstate commerce for purposes that include carrying students to and from school or related events. May be type A-D.
- *Scrapped* shall mean to render inoperable and available for recycle, and, at a minimum, to specifically cut a 3-inch hole in the engine block for all engines. If any Eligible Vehicle will be replaced as part of an Eligible project, Scrapped shall also include the disabling of the chassis by cutting the vehicle's frame rails completely in half.
- *Tier 0, 1, 2, 3, 4* shall mean the corresponding EPA engine emission classifications for nonroad, locomotive, and marine engines.
- *Tugs* shall mean dedicated vessels that push or pull other vessels in ports, harbors, and inland waterways (e.g., tugboats and towboats).
- *Zero Emission Vehicle (ZEV)* shall mean a vehicle that produces no emissions from the on-board source of power (e.g., All-electric or hydrogen fuel cell vehicles).